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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,120	08/25/2003	Stephen P. Farrell	ARC920030032US1	3193
67232 7590 12/28/2007 CANTOR COLBURN, LLP - IBM ARC DIVISION 20 Church Street 22nd Floor Hartford, CT 06103			EXAMINER THERIAULT, STEVEN B	
			ART UNIT 2179	PAPER NUMBER
			MAIL DATE 12/28/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/648,120

Applicant(s)

FARRELL ET AL.

Examiner

Steven B. Theriault

Art Unit

2179

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 6-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 6-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This action is responsive to the following communications: RCE filed 09/26/2007.
2. Claims 1, 6-22 are pending in the case. Claims 1, 17, and 20 are the independent claims. Claims 2-5 have been cancelled.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 09/26/2007 has been entered.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 20-22 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The language of the claims raise a question as to whether the claims are directed merely to an abstract idea that is not tied to a technological art, environment or machine which would result in a practical application producing a concrete, useful and tangible result to form the basis of statutory subject matter under 35 U.S.C. 101.

With regard to **claims 20-22**, the computer-program product is defined in the specification as follows

[0041] FIG. 1 illustrates an exemplary high-level architecture of an integrated gaze/manual control system 100 comprising a display object expansion and/or contraction system 10 that automatically expands a region of a video screen when system 100 determines that a user has visually selected that region or object. System 10 comprises a software programming code or computer program product that is typically embedded within, or installed on a computer. Alternatively, system 10 can be saved on a suitable storage medium such as a diskette, a CD, a hard drive, or like devices.

The Examiner interprets the specification and as recited in the claims that the product is stored on the medium. The specification includes alternative embodiments where the program product is software stored on the storage medium, as the specification does not specifically recite that the product **includes** the medium. Further, when taking the claims, as a whole, the claim reads as a set of instructions to be

executed but does not recite a positive transformation of the code to be realized. The claim recites code “**for executing**” but does not include a transformation to realize the steps that actually execute the code. It can be stated that the claim limitations do contain relationships where a step, when executed, would provide data or display data to another module but as stated above the code comprises the modules for executing the step but there does not appear to be an actual transformation of the program on the apparatus to realize the claimed invention. In summary, the steps appear to be software per se and do not recite a transformation of the code to include a tangible result and consistent with MPEP 2106, the claimed subject matter is not currently believed to be limited to that which falls within a statutory category of invention, because in one interpretation, the code is not limited to a process, machine, manufacture, or a composition of matter because the program is considered software per se.

To expedite a complete examination of the instant application the claims rejected under 35 U.S.C 101 (nonstatutory) above are further rejected as set forth below in anticipation of applicant amending these claims to place them within the four statutory categories of invention.

Claim Rejections - 35 USC § 103

4. **The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:**

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

The application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. **Claims 1, 6-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hutchinson et al. (Patent No. 6152563) in view of Tognazzini et al. (Patent No. 5,731,805).**

In regard to **Independent claim 1**, Hutchinson teaches a method of interacting with a monitor, comprising:

- Modifying a portion of an output displayed on a monitor by tracking an eye gaze and by monitoring an input indicator on the monitor that reflects a user's activity wherein the output comprises at least part of a stationary target object representing an interactive component comprising at least one of a button, a scroll bar, a hyperlink, or a menu (Hutchinson column 11, lines 55-60 and Figure 9 and column 1, lines 1-25 and column 2, lines 45-51). Hutchinson teaches the users eyes are tracked to a stationary target such as a button.
- Wherein tracking the eye gaze comprises monitoring a user's eye movement in a direction of the stationary target object and further monitoring a trajectory of the input indicator on the monitor (Hutchinson column 2, lines 45-52 and column 4, lines 1-15).

Hutchinson teaches the system monitors the eye movement and trajectory (See column 11, lines 1-20).

- Wherein the portion of the output is modified upon detecting the coincidence of the user's eye movement and the input indicator trajectory in the direction of the target object (See column 11, lines 45-50). Hutchinson teaches the area detected by the users gaze is magnified.
- Identifying the stationary target object through eye-gaze tracking by identifying at least one particular pixel being gazed at by the user (Hutchinson column 7, lines 1-15). Hutchinson teaches determining the target by identifying the pixel on the screen the user is looking at (See also Figure 4 and 4a).
- Wherein modifying the portion of the output comprises selectively expanding a target object region in the portion of the output (Hutchinson column 11, lines 45-52) Hutchinson teaches modifying the region by expanding it.

Hutchinson does not expressly teach:

- Wherein modifying the portion of the output further comprises selectively contracting a region surrounding the target object region in the portion of the output, to compensate for the expanded target object region.

However, Tognazzini teaches a eye-gaze tracking mechanism for text enlargement that expressly teaches a process of enlarging a target object of Text and contracting a second object of text in the same screen for the purposes of utilizing the available screen area and not enlarging the window to display the text so that the user can see it in an enlarged manner (See figure 11, and column 14, lines 6-37). Hutchinson and Tognazzini are analogous art because they both teach processes of eye-gaze tracking and both teach processes of tracking objects on the display.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time of the invention, having the teachings of Tognazzini and Hutchinson, to modify the system of Hutchinson to include the contraction/expansion feature of Tognazzini. The motivation to combine

comes expressly from the teachings within Hutchinson (See column 2, lines 1-25), that eye gaze technology allows handicapped users or other users to use the system and interact with the computer completely through eye movements. Further, Hutchinson teaches the system can be used in a variety of applications that require eye gaze functionality.

With respect to **dependent claim 6**, Hutchinson teaches determining a modification time based on data derived concurrently from the user's eye gaze (See column 11, lines 40-50). Hutchinson teaches the user dwells on the location and a red rectangle is applied to the object for a certain period of time.

With respect to **dependent claim 7**, Hutchinson teaches determining a motion direction of the input indicator (see column 3, lines 50-67 and column 12, lines 26-40). Hutchinson teaches monitoring when the user drags or moves the cursor in a given direction.

With respect to **dependent claim 8**, Hutchinson teaches identifying the target object based on data derived concurrently from the eye gaze and the direction of movement of the input indicator (See column 11, lines 40-50 and column 12, lines 20-40).

With respect to **dependent claims 9 -11**, Hutchinson teaches the user can interact with menus and buttons (See column 11, lines 55-65). Hutchinson does not specifically mention identifying the portion of the output based on boundaries of interactive graphical user interface components. However, this limitation would have been obvious to one of ordinary skill in the art at the time of the invention, in view of Tognazzini, because Tognazzini teaches a process of determining text boundaries as shown in Figure 11, where there are four columns, and the expanding and contracting occurs around the text between the columns of data (See figure 11 and column 14, lines 6-51). Tognazzini also teaches the process of expanding the text is so that the user can interact with the text and read it (See column 15, lines 10-25). Tognazzini further teaches that the components, text, images, audio can be selected and magnified (See column 8, Lines 5-10).

With respect to **dependent claim 12**, Hutchinson teaches the input indicator is inputted by an input device that comprises any one or more of a mouse, a touch screen, a tablet computer, a personal digital assistant, a stylus, and a motion sensor (See column 12, lines 40-60 and column 3, lines 50-67).

With respect to **dependent claims 13- 16**, as indicated in the above discussion, Hutchinson in view of Tognazzini, teach every element of claim 5 and 12.

Hutchinson does not expressly teach *transforming the portion of the output by hiding an area of the monitor by an increase in side of the target object or moving one or more objects on the monitor towards one or more edges or reducing a size of one or more objects located adjacent the target object while maintaining a change or original appearance and restoring the target object to the original appearance when the eye-gaze indicates the object is no longer selected.*

However, these limitations would have been obvious to one of ordinary skill in the art at the time of the invention, in view of Tognazzini, because Tognazzini teaches a process of moving an object to the edges of the screen to accommodate the selected object (See figure 11) and a process of reducing the size of the objects within the screen adjacent to the selected object (See column 14, lines 6-67). Tognazzini also shows restoring the image to the original shape (see column 14, lines 24-50) and a process of hiding an area of the monitor that is covered by the enlarged object (See figure 12, objects behind are hidden or overlapped).

In regard to **Claims 17- 19**, claims 17-19 reflect the system comprising computer readable instructions for performing the steps of method claims 1, 6 -7, respectively, and are rejected along the same rationale.

In regard to **Claims 20-22**, claims 20-22 reflect the an article comprising computer readable instructions for performing the steps of method claims 1, 6 -7, respectively, and are rejected along the same rationale.

It is noted that any citation to specific pages, columns, lines, or figures in the prior art references and any interpretation of the references should not be considered to be limiting in any way. A reference is relevant for all it contains and may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art. In re Heck, 699 F.2d 1331, 1332-33, 216 USPQ 1038, 1039 (Fed. Cir. 1983) (quoting In re Lemelson, 397 F.2d 1006, 1009, 158 USPQ 275, 277 (CCPA 1968)).

Response to Arguments


Applicant's arguments with respect to claims 1 and 6-22 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven B. Theriault whose telephone number is (571) 272-5867. The examiner can normally be reached on M, W, F 10:00AM - 8:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Weilun Lo can be reached on (571) 272-4847. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


/Steven B. Theriault/
Patent Examiner
Art Unit 2179